REMARKS

This is intended as a full and complete response to the Office Action dated June 18, 2003, having a shortened statutory period for response set to expire on September 18, 2003. Please reconsider the claims pending in the application for reasons discussed below.

Claims 8 - 36 remain pending in the application and are shown above. Claims 1-7, 9, 20, 22, 23, and 31 have been canceled by Applicant. Claims 8 - 36 are rejected. Reconsideration of the rejected claims is requested for reasons presented below.

Claim 8 is amended to include the limitations of claim 9, and claim 9 has been canceled. Claim 19 is amended to include the limitations of claim 20 and to specify that the slurry includes potassium hydroxide. Claims 20, 22, and 23 have been canceled. Claim 30 is amended to include the limitations of claim 31, and claim 31 has been canceled. Applicants submit that the changes made herein do not introduce new matter.

Claims 8, 10-13, 15-19, 21-24, and 26-29 stand rejected under 35 U.S.C § 102(b) as being anticipated by *Homma, et al.* (U.S. Patent No. 6,043,155). Clams 9, 14, 20, 25, and 30-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Homma, et al.*

As amended, claim 8 is equivalent to former claim 9, which specified that the abrasive material of the slurry is selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof. The Examiner asserts that *Homma's* background describes using silicon dioxide colloids to polish insulating layers, and that it would have been obvious to substitute inexpensive silicon dioxide for ceria in the method of *Homma, et al.* in the absence of showing of criticality by way of unexpected results achieved through the use of the specific abrasive chosen. Applicants respectfully traverse the rejection.

Homma, et al. describes polishing an organic insulating film of a silicon compound containing 1% or more of organic components in the film with a slurry containing cerium oxide A or cerium oxide B. *Homma, et al.* does not describe or suggest polishing an organosilicate layer with a slurry containing an abrasive material

selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof. While *Homma, et al.* recognizes that it is known to polish a SiO_2 layer with silica in an aqueous solution with KOH (column 1, lines 23-26), *Homma, et al.* does not teach or suggest that the organic insulating film described therein can be polished with a slurry containing an abrasive other than cerium oxide. *Homma, et al.* only compares silica and cerium oxide polishing rates of inorganic doped insulating films. As *Homma, et al.* was aware of the use of silica for polishing SiO_2 and inorganic doped insulating films but did not describe the use or testing of silica for polishing organic insulating films, *Homma, et al.* does not provide a motivation or suggestion to use silica for polishing organic insulating films, and inferentially teaches against it. *Homma, et al.* suggests that organic insulating films are difficult to polish, as even some of the cerium oxide-containing slurries described therein did not polish the organic insulating films at a high rate. *Homma, et al.* teaches that the slurry with cerium oxide A is better for polishing organic insulating films and that the slurry with cerium oxide B is better for polishing inorganic insulating films (Figures 4a, 4b, column 3, lines 56-59, column 4, lines 58-63).

Thus, *Homma, et al.* does not teach, show, or suggest a method for planarizing an organosilicate layer, comprising positioning a substrate having an organosilicate layer thereon in a polishing system, providing a slurry including an abrasive material selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof dispersed in a solvent to the polishing system, wherein the slurry has a pH greater than about 9.0, and polishing the organosilicate layer using the slurry, as recited in claim 8. Applicants respectfully request withdrawal of the rejection of claim 8, and of claims 10-18, which depend thereon.

Applicants further submit that *Homma, et al.* does not describe or suggest polishing an organosilicate layer with a slurry containing an abrasive material selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof and a source of hydroxyl ions selected from the group consisting of potassium hydroxide (KOH), ammonium hydroxide (NH_4OH), sodium hydroxide (NaOH), calcium hydroxide (CaOH), magnesium

hydroxide (MgOH), as described in claim 12. *Homma, et al.* describes polishing SiO_2 with a slurry containing silica and KOH and polishing an organic insulating film with a slurry containing cerium oxide and a pH adjusting agent such as ammonia, waterholding hydrazine or an amine containing neither Na nor K, or an acid. *Homma, et al.* provides no suggestion or motivation to include potassium hydroxide (KOH), ammonium hydroxide (NH_4OH), sodium hydroxide (NaOH), calcium hydroxide (CaOH), magnesium hydroxide (MgOH) in a slurry for polishing an organosilicate layer. Applicants respectfully request withdrawal of the rejection of claim 12.

As amended, claim 19 includes the limitations of former claim 20. Applicants submit that *Homma, et al.* does not describe or suggest polishing an organosilicate layer with a slurry containing an abrasive material selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof and KOH, as described in claim 19. Applicants submit that *Homma, et al.* teaches away from using KOH as a pH adjusting agent, as *Homma, et al.* describes pH adjusting agents such as ammonia, waterholding hydrazine or an amine containing neither Na nor K (column 4, lines 35-38). Furthermore, as discussed above, *Homma, et al.* does not teach or suggest polishing an organosilicate layer with a slurry including an abrasive material selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof. Thus, *Homma, et al.* does not teach, show, or suggest a method for fabricating a device, comprising providing a substrate having conductive features formed thereon with an organosilicate layer deposited between and on top of the conductive features, positioning the substrate in a polishing system, providing a slurry including an abrasive material selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof dispersed in a solvent and potassium hydroxide (KOH) to the polishing system, wherein the slurry has a pH greater than about 9, and polishing the organosilicate layer using the slurry, as recited in claim 19. Applicants respectfully request withdrawal of the rejection of claim 19, and of claims 21 and 24-29, which depend thereon.

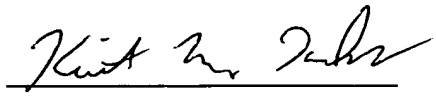
Regarding claim 30, the Examiner states that the percent weight of the abrasive slurry would constitute an obvious matter of design choice in the absence of showing

unexpected results. Applicants submit that the Examiner has not shown how *Homma, et al.* motivates or suggests the claimed range of about 10% by weight to about 60% by weight of abrasive material. *Homma, et al.* does not describe the percent by weight of the abrasive material or suggest that the percent by weight of the abrasive material is a factor that should be changed to improve polishing an organosilicate layer.

As amended, claim 30 also specifies that an organosilicate layer is polished with a slurry including an abrasive material selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof. As discussed above, *Homma, et al.* does not teach or suggest polishing an organosilicate layer with a slurry including an abrasive material selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof. Thus, *Homma, et al.* does not teach or suggest a method for planarizing an organosilicate layer, comprising positioning a substrate having an organosilicate layer thereon in a polishing system, providing a slurry including an abrasive material selected from the group consisting of silica (SiO_2), aluminum oxide (Al_2O_3), zirconium oxide (ZrO_2), titanium oxide (TiO_2), and combinations thereof having an average particle size greater than about 35 nm and dispersed in a solvent to the polishing system, wherein the slurry has a pH greater than about 9.0 and the concentration of the abrasive material in the slurry is within a range of about 10% by weight to about 60% by weight, and polishing the organosilicate layer using the slurry, as recited in claim 30. Applicants respectfully request withdrawal of the rejection of claim 30, and of claims 32-36, which depend thereon.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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